Docket No.: END920010025US1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Patent Application of: Yesim Erke et al.

Group Art Unit: 3627	:	IBM Corporation
Examiner: Luna Champagne	:	Intellectual Property Law
Serial No.: 09/879,677	:	Department SHCB/040-3
Filed: 06/12/2001	:	1701 North Street
Confirmation No. 5004	:	Endicott, New York 13760
Title: METHOD OF DETERMINING INVENTORY LEVELS	:	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF

Dear Sir:

Appellants hereby appeal from the Final Action of 03/21/2007 and offer the following arguments in support thereof:

(i) REAL PARTY IN INTEREST

The real party in interest is International Business Machines Corporation, a corporation of New York, with a place of business at Armonk, NY 10504.

(ii) RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences with which the undersigned is aware.

(iii) STATUS OF CLAIMS

Claims 3,4,6,7,19,21,22 and 24 - 27 are pending in the present application. Claims 3,4,6,7,19,21,22 and 24 - 27 have all been finally rejected and are the subject matter of this appeal.

(iv) STATUS OF AMENDMENTS

There were no amendments filed subsequent to the final rejection of 03/21/2007.

(v) SUMMARY OF CLAIMED SUBJECT MATTER

Appellants' invention relates generally to a method and computer program product for determining inventory levels of replacement parts in a network of neighboring part facilities. A customer oriented performance criteria is optimized while minimizing overall costs among the facilities.

According to Appellants' independent claim 3, a method of determining inventory levels of parts for a plurality of stocking locations within a two hour neighborhood 18 of a primary location 12, wherein the parts are normally stocked at more than one of the stocking locations 12, 16, is performed by the following steps: (refer to FIGs. 1 - 3 and Appellants' Specification page 8, lines 4 - 21). Data for a plurality of customer locations is provided. This includes the unit price of parts, request rates for each of the parts for each of the customer locations, handling costs for each of the stocking

locations, and travel time and transportation costs between the stocking locations. In this claim, the request rates include a probability distribution for one or more of the request rates. See FIG. 3, step 31, and page 11, lines 5 - 16, and claim 3 as originally filed.

Claim 3 further requires that a parts procurement time performance measure for the transfer of the parts from the plurality of stocking locations to the plurality of customer locations be specified. The parts procurement time performance measure includes the percentage of parts in the request rate which can be transferred from any stocking location to each respective customer location within a pre-specified time. The equipment requiring the parts must be installed at one or more of the customer locations. See FIG. 3, step 32, and page 13, lines 1 - 12.

Furthermore, claim 3 requires the user to enter the data and performance measure into an optimization computer program. See FIG. 3, step 33, and page 13, lines 17 - 24.

Claim 3 also requires the inventory levels of the parts for the plurality of stocking locations to be computed using the optimization computer program. See FIG. 3, step 34, and page 19, lines 6 - 17.

Finally, claim 3 requires that sufficient numbers of the parts be ordered to maintain the inventory levels at the plurality of stocking locations, wherein the inventory levels

are such that the performance measure is met. See FIG. 3, step 35, and page 20, lines 1 - 4.

Appellants' independent claim 6 follows the same steps as Appellants' independent claim 3 except for the following differences. In claim 6, the request rates are not required to include a probability distribution for one or more of the request rates. Rather, the parts are grouped by importance, see page 2, lines 4 - 5, and claim 6 as originally filed, into a plurality of groups and the pre-specified time of the parts procurement time performance measure comprises a corresponding plurality of times. References to the Specification, drawings, and reference characters for the other steps of claim 6 are identical to those given above for claim 3 and are therefore not specifically stated here to avoid repetition.

According to Appellants' independent claim 19, a computer program product is claimed that performs the steps of Appellants' independent claim 3. References to the Specification, drawings, and reference characters are identical to those given above for claim 3 and are therefore not specifically stated here to avoid repetition.

Appellants' independent claim 21 follows the same steps as Appellants' independent claim 6 except for the following differences. In claim 21, it is not required that equipment requiring one or more of the parts be installed at one or more of the plurality of customer locations. Also, in claim 21, it is not required that the inventory levels are such that the performance measure is met. Specification, drawings, and

reference characters are identical to those given above for claim 6 and are therefore not specifically stated here to avoid repetition.

(vi) GROUNDS OF REJECTION

There are three grounds of rejection.

First Ground of Rejection:

Claims 3, 4, 6, 7, 19, 21, 22, 24, 26 and 27 have been rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which is regarded as the invention.

Second Ground of Rejection:

Claims 3-4 and 19 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Ettl et al. (U.S. Patent 5,946,662).

Specifically, regarding the five clauses of claim 3, the Examiner states that Ettl discloses the limitations of the claim except the specific teaching of providing handling costs for each of the stocking locations, and the equipment requiring one or more parts installed at the customer locations. The Examiner argues that these deficiencies are well known in the art and it would be obvious to modify Ettl et al. to include handling costs and parts required by the equipment at customer locations in order to consider all costs and scenarios when using the optimizing software.

Independent claim 19 is rejected by the Examiner under the same rationale relied upon for claim 3.

Third Ground of Rejection:

Claims 6, 7, 21-22 and 24-27 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Ettl et al. (U.S. Patent 5,946,662) in view of Kaylan et al. (U.S. Patent 6,826,538).

Specifically, regarding the 5 clauses of claim 6, the Examiner states that Ettl discloses the limitations of the claim except for handling costs, equipment requiring one or more parts installed at the customer locations and the parts being grouped by importance into a plurality of groups and the pre-specified time comprises a corresponding plurality of times. The Examiner argues that Kaylan teaches that a product may have multiple components whereby the minimum accepted value is calculated for each component. The Examiner further states that each minimum accepted value calculated is a function of "lead time" which correlates to the "plurality of times" of this application.

The Examiner believes it would have been obvious to one of ordinary skill in the art to modify Ettl et al. to included grouping parts whereby the groupings have a corresponding plurality of times in view of Kaylan et al., in order to account for the variables in pricing associated with lead time.

Furthermore, the Examiner argues that it would have been obvious to one of ordinary skill of the art to modify Ettl et al. to have the groups be grouped by importance as the customer would want to ensure that the most critical components arrive in

less time than the less critical parts.

The Examiner argues that the other deficiencies are well known in the art and it would be obvious to modify Ettl et al. to include handling costs and parts required by the equipment at customer locations in order to consider all costs and scenarios when using the optimizing software.

Independent claim 21 is rejected by the Examiner under the same rationale relied upon for claim 6.

There are no other independent claims pending in the application.

Appellants do not argue separately patentability of any of the dependent claims.

(vii) ARGUMENT

First Ground of Rejection:

Claim 3, 4, 6, 7, 19, 21, 22, 24, 26 and 27 are patentable under 35 U.S.C. 112.

Regarding the preambles of independent claims 3, 6, 19 and 21, the Examiner states that the term "two hour" is vague. The Examiner argues that it is unclear what mode of transportation is associated with the "two hour" limitation set in the claims and the time limit does not change the scope of the claim without the mode of transportation. Appellants disagree.

The term in independent claims 3, 6, 19, and 21 is not "two hour", it is a "two hour neighborhood of a primary location". One skilled in the parts stocking art at the time the invention was made would clearly understand that this is a region within a two hour travel time of the primary location. Appellants' Specification page 8, lines 10 - 21 in conjunction with FIGs. 1a and 1b clearly describes the region within boundary 18 as a two hour neighborhood of primary location 12.

There is no need to specify the mode of transportation in claims 3, 6, 19, and 21. The limitation is a two hour neighborhood, i.e., a region within a two-hour travel time. Any mode of travel which takes less than two hours meets the limitation. Furthermore, modes of travel may change over time. Appellants do not need to further limit their claim by specifying a mode of travel.

Appellants respectfully request the board to overrule the Examiner's rejection under 35 U.S.C. 112 for failure to specify a mode of transportation.

Second Ground of Rejection:

Claims 3-4 and 19 are patentable under 35 U.S.C. 103(a) over the prior art and particularly, U.S. Patent 5,946,662 (Ettl).

Ettl et al. does not describe or suggest all of the required steps of Appellants' claim 3. Appellants therefore

respectfully disagree with this rejection and offer the following arguments in support thereof.

Appellants' claim 3 requires that the plurality of stocking locations must be within a two hour neighborhood of a primary location. Ettl does not describe or suggest such a neighborhood or a plurality of stocking locations located there within. All of the parts in Ettl's description follows a fixed path as shown in his FIG. 1 supply chain network. There is no opportunity in Ettl's disclosure for an alternate supply path. Ettl, therefore, does not describe or suggest the neighborhood fill method of Appellants' independent claim 3.

Rejection of independent claim 19 is also in error for the same reasons.

Third Ground of Rejection:

Claims 6, 7, 21-22 and 24-27 are patentable under 35 U.S.C. 103(a) over the prior art and particularly, U.S. Patent 5,946,662 (Ettl) in combination with U.S. Patent 6,826,538 (Kaylan).

The combination of Ettl with Kaylan does not describe or suggest all of the required steps of Appellants' claim 6. Appellants therefore respectfully disagree with this rejection and offer the following arguments in support thereof.

Appellants' claim 6 requires that the plurality of stocking locations must be within a two hour neighborhood of a primary location. Neither Ettl nor Kaylan describe or suggest such a

neighborhood or a plurality of stocking locations located there within. Claim 6 is therefore allowable for the same reason as claims 3 and 19.

Rejection of independent claim 21 is also in error for the same reasons.

In view of the above, Appellants respectfully request that the Board reverse the Examiner's Final Rejection of all of the claims on appeal, and allow these claims.

Respectfully submitted,

Dated: 05/23/2007

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(viii) CLAIMS APPENDIX

3. (Previously Amended) A method of determining inventory levels of parts for a plurality of stocking locations within a two hour neighborhood of a primary location, wherein said parts are normally stocked at more than one of said stocking locations, said method comprising:

providing data for plurality of customer locations, unit price of said parts, request rates for each of said parts for each of said customer locations, handling costs for each of said stocking locations, and travel time and transportation cost between said stocking locations, wherein said request rates include a probability distribution for one or more of said request rates;

specifying a parts procurement time performance measure for transfer of said parts from said plurality of stocking locations to said plurality of customer locations, wherein said parts procurement time performance measure comprises the percentage of parts in said request rates which can be transferred from any said stocking location to each respective said customer location within a pre-specified time, and wherein equipment requiring on or more of said parts is installed at one or more of said plurality of customer locations;

entering said data and said performance measure into an optimization computer program;

computing said inventory levels of said parts for said plurality of stocking locations using said optimization computer program; and

ordering sufficient numbers of said parts to maintain said inventory levels at said plurality of stocking locations, wherein said inventory levels are such that said performance measure is met.

4. (Original) The method of claim 3, wherein said probability distribution is a Poisson distribution.

6. (Previously Amended) A method of determining inventory levels of parts for a plurality of stocking locations within a two hour neighborhood of a primary location, wherein said parts are normally stocked at more than one of said stocking locations, said method comprising:

providing data for a plurality of customer locations, unit price of said parts, request rates for each of said parts for each of said customer locations, handling costs for each of said stocking locations, and travel time and transportation cost between said stocking locations;

specifying a parts procurement time performance measure for transfer of said parts from said plurality of stocking locations to said plurality of customer locations, wherein said parts procurement time performance measure comprises the percentage of

parts in said request rates which can be transferred from any said stocking location to each respective said customer location within a pre-specified time, wherein said parts are grouped by importance into a plurality of groups and said pre-specified time comprises a corresponding plurality of times, and wherein equipment requiring one or more of said parts is installed at one or more of said plurality of customer locations;

entering said data and said performance measure into an optimization computer program;

computing said inventory levels of said parts for said plurality of stocking locations using optimization computer program; and

ordering sufficient numbers of said parts to maintain said inventory levels at said plurality of stocking locations, wherein said inventory levels are such that said performance measure is met.

7. (Original) The method of claim 6, wherein inventory levels are computed to minimize overall cost while meeting or exceeding said plurality of times

19. (Previously Amended) A computer program product for instructing a processor to determine inventory levels of parts for a plurality of stocking locations within a two hour neighborhood of a primary locations, wherein said parts are

normally stocked at more than one of said stocking locations, said computer program product comprising:

a computer readable medium;

first program instruction means for providing data for a plurality of customer locations, unit price of said parts, request rates for each of said parts for each of said customer locations, handling costs for each of said stocking locations, and travel time and transportation cost between said stocking locations, wherein said request rates include a probability distribution for one or more of said request rates;

second program instruction means for specifying a parts procurement time performance measure for transfer of said parts from said plurality of stocking locations to said plurality of customer locations, wherein said parts procurement time performance measure comprises the percentage of parts in said request rates which can be transferred from any said stocking location to each respective said customer location within a pre-specified time, and wherein equipment requiring one or more of said parts is installed at one or more of said plurality of customer locations;

third program instruction means for providing said data and said performance measure to an optimization computer program;

fourth program instruction means for computing said inventory levels of said parts for said plurality of stocking locations using said optimization computer program; and

fifth program instruction means for ordering sufficient numbers of said parts to maintain said inventory levels at said plurality of stocking locations, wherein said inventory levels are such that said performance measure is met; and wherein

all said program instruction means are recorded on said medium.

21. (Previously Amended) A method of determining inventory levels of parts for a plurality of stocking locations within a two hour neighborhood of a primary location, wherein said parts are normally stocked at more than one of said stocking locations, said method comprising:

providing data for a plurality of customer locations, unit price of said parts, request rates for each of said parts for each of said customer locations, handling costs for each of said stocking locations, and travel time and transportation cost between said stocking locations;

specifying a parts procurement time performance measure, wherein said parts procurement time performance measure comprises the percentage of parts in said request rates which can be transferred from any said stocking location to each said respective customer location within a pre-specified time, and wherein said parts are grouped by importance into a plurality of groups and said pre-specified time comprises a corresponding plurality of times;

entering said data and said performance measure into an optimization computer program;

computing said inventory levels of said parts for said plurality of stocking locations using said optimization computer program; and

ordering sufficient numbers of said parts to maintain said inventory levels at said plurality of stocking locations.

22. (Previously Presented) The method of claim 21, wherein inventory levels are computed to minimize overall cost while meeting or exceeding said plurality of times.

24. (New) The method of claim 21, wherein said data for said plurality of customer locations includes travel time and cost to transfer a part from each of said plurality of stocking locations to each of said customer locations.

25. (New) The method of claim 21 wherein said optimization computer program is a mixed integer optimization program.

26. (New) The method of claim 21, wherein said inventory levels are computed to meet a total inventory cost while maximizing the percentage of said parts in said request rates which can be

transferred from any said stocking location to each respective said customer location within a pre-specified time.

27. (New) The method of claim 21, further comprising computing an estimated time for each part to be transferred from any said stocking location to each respective said customer location for each of said parts in said request rates.

(ix) EVIDENCE APPENDIX

None.

(x) RELATED PROCEEDINGS APPENDIX

None.